

Drought Status for September 2005
National Weather Service, Albuquerque, NM

Discussion: After an exceptionally-dry June and July, August was closer to normal for much of New Mexico, and was actually above normal over the majority of the state. In general, August was wet over the eastern half of New Mexico while precipitation exhibited considerable variability over the west. August did help salvage an otherwise very dry summer to some degree, although, overall precipitation for the summer (June-August) was well below normal for the state. Preliminary numbers suggest the summer of 2005 was the 13th driest in New Mexico in the past 111 years. It was also the 15th warmest, leading to increased evaporation of available moisture.

One of the wetter regions of New Mexico during August was in an area through Mora and Harding Counties. Rosebud (Harding County) measured 9.08 inches of rain, while Ocate totaled 6.25 inches. Another wet region was the Sacramento-Capitan Mountain region. Cloudcroft measured 6.17 inches of rainfall, which was 1.32 inches above normal. Ruidoso measured 5.48 inches, 1.28 inches above normal. Other spots in that region were as much as 2-3 inches above normal, with 7.32 inches at Sierra Blanca Airport and generally 7 to 8 inches in and around Alto. Picacho measured 6.12 inches, nearly two inches above the August normal of 4.21 inches. Still, coupled with the fact the June-July period was one of the driest on record with deficits as much as 4-5 inches, the wet August did not bring the summer precipitation up to normal over the Capitan-Sacramento Mountain region. In the north, Los Alamos was an isolated spot that did well, with 5.76 inches of August rain, over two inches above the normal of 3.58 inches.

Parts of New Mexico experienced a dry August. Some of the notable spots included: Cliff, with 1.01 inches, well below the normal of 2.90 inches, Albuquerque, with 0.49 inches compared to a normal of 1.47 inches, Gila Hot Springs with 0.91 inches, over two inches below the normal of 3.12 inches, and Moriarty, with 0.46 inches compared to a normal of 2.60 inches.

The following table shows the summer (June-August) rainfall at some locations, along with the normal and percentage of normal.

Location	June-August 2005	Normal	Percent of Normal
Rosebud (Harding)	11.08	7.06	157
Bosque del Apache	4.15	3.57	116
Chama	6.55	5.97	110
Farmington	2.47	2.31	107
Mosquero	8.25	7.94	104
Ocate	9.95	9.69	103
Portales	8.08	7.89	102
Clovis	7.87	8.22	96
Conchas Dam	6.38	6.77	94
Los Alamos	7.65	8.24	93
Fence Lake	4.85	5.23	91
Gallup	3.60	3.95	91
Red River	6.82	7.52	91
Capitan	6.60	7.49	88
Faywood	4.66	5.43	86
Alcalde	3.46	4.13	84
Roswell	4.64	5.54	84
Cloudcroft	9.81	11.89	83
Picacho	6.99	8.54	82
Cimarron	6.03	7.31	82
Lindrith	4.05	4.92	82
Quemado	3.93	4.93	80
Fort Sumner	5.09	6.41	79

Location	June-August 2005	Normal	Percent of Normal
Tucumcari	5.70	7.29	78
Carlsbad	3.89	5.11	76
Deming	3.15	4.18	75
Tularosa	2.85	4.02	71
Estancia	3.83	5.45	70
Clayton	4.68	6.83	69
Tatum	4.80	6.96	69
Ghost Ranch	3.04	4.66	65
Ruidoso	6.41	10.14	63
Socorro	2.35	3.81	62
Reserve	3.54	5.76	61
Artesia	2.94	4.83	61
Grants	2.53	4.38	58
Jemez Springs	3.86	6.89	57
Johnson Ranch	2.44	4.47	55
Las Vegas Airport	4.78	8.65	55
Truth or Consequences	2.79	5.08	55
Mountainair	3.07	6.00	51
Animas	2.35	4.87	48
Albuquerque Sunport	1.61	3.44	47
Santa Fe	2.55	5.43	47
Fort Bayard	3.45	7.31	47
Cliff	2.74	6.09	45
Wolf Canyon	3.73	8.23	45
Sandia Park	3.07	7.01	44
Las Cruces	1.83	4.34	42
Albuquerque Foothills	2.16	5.89	37
Gila Hot Springs	1.82	6.55	28
Los Lunas	0.98	3.60	27
Moriarty	0.46	2.60	23

On the positive side, the North American Monsoon still impacted New Mexico during the first couple of week of September. The September precipitation totals will be reviewed in October to determine if they will have any impact on the drought situation.

Because of the exceptionally-wet period from January through April, calendar year and water year (since October 1, 2004) precipitation is still above normal across New Mexico. However, average precipitation by climate division has been below normal since that time. Over the past three months, the Northern Mountains (division 2), Southwest Mountains (division 4), and Central Highlands (division 6) have all accumulated new deficits averaging between 2 and 3 inches. These measurements are all in the driest 10 percent of three month (June-August) periods in the historical records.

Meanwhile, long-term drought conditions linger in some areas. Worst **long-term** drought conditions remain over portions of the northern mountains, mainly in a strip from near Las Vegas to Santa Fe...Jemez Springs and Los Alamos. Forty-eight month deficits through August 2005 were all between 14 and 15 inches at Las Vegas, Santa Fe and Los Alamos, and 21 inches at Jemez Springs.

The 2nd worst areas include the Capitan and northern Sacramento Mountains within Lincoln County, where forty-eight month deficits are generally in the 4 to 8 inch range but are as high as 12 inches around Ruidoso. The 3rd area where long-term drought lingers is the portion of western New Mexico through Grants, Gallup and Zuni. Forty-eight month deficits in this region are generally 5 to 7 inches, and as high as 12 inches at Zuni.

The following table shows the 2005 precipitation anomaly by climate division, water year (Oct 2004-Aug 2005) anomaly, short-term (<= 12 months) and long-term (>12 months) Standardized Precipitation Index (SPI). Percentile is a good measure to determine how rare the precipitation value is. In general, percentiles from 1 to 10 are associated with “emergency” drought conditions in New Mexico. Percentiles from 11 to 20 are consistent with drought “warning” designations, while values from 21-40 are usually indicative of drought “alerts” (21-30), and “advisories” (31-40).

Climate Division	Anomaly Jan-Aug 2005	Anomaly Oct 2004-Aug 2005	Lowest Short Term SPI (month) Anomaly/ Percentile	Lowest Long Term SPI (month) Anomaly/Percentile
1 NWest	+1.9"	+1.5"	- 1.0 (4) -1.1" 25 th	-0.7 (72) -5.6"/23 rd
2 N Mtns	+1.4"	+2.4"	- 1.5 (3) -2.2" 7 th	-1.6 (72) -12.6"/6 th
3 NE Plains	+1.9"	+4.5"	- 0.3 (3) -0.8" 39 th	0.0 (72) +0.3 /52 nd
4 SW Mtns	+1.4"	+3.1"	- 1.5 (3) -2.0" 5 th	-0.1(48) -1.1"/45 th
5 Cntrl Vly	+2.1"	+3.4"	- 1.5 (3) -1.7" 7 th	0.0 (48) +0.4"/53 rd
6 Cntrl Highlnds	+0.8"	+2.5"	- 2.1 (3) -3.0" 2 nd	-1.0 (72) -9.8"/16 th
7 SE Plains	+1.7"	+5.2"	- 0.2 (3) -0.6" 42 nd	0.0 (72) +0.2"/51 st
8 Srn Desert	+1.9"	+3.3"	- 1.3 (3) -1.7" 10 th	-0.4 (72) -2.8"/35 th

Rangeland/Pasture conditions: As of mid-September, 49 percent of the pasture and range land in New Mexico was considered to be in good or better condition. This is up substantially from early August, showing the impact of the relatively-wet August on surface conditions. Nineteen percent of the land was considered to be in poor or very poor condition, down from 31 percent in early August. According to USDA, topsoil moisture was short or very short over 36 percent of the area, down from 53 percent in early August. Topsoil moisture was considered to be adequate over 60 percent of the area, compared to only 39 percent in early August. Moisture was considered to be surplus over 4 percent of the area.

Fire Danger Impacts: The rains of August and early September have eased fire danger from the high to extreme conditions of July. As of mid-September, according to the USFS, most areas of the state exhibited low to moderate fire danger.

Hydrologic Impacts: New Mexico reservoir storage is substantially better than last year at this time. Some of the systems in the north and east have reached levels above the long-term normal. This would include El Vado, Costilla and Navajo in the north, and Santa Rosa, Sumner and Lake Avalon in the east. In terms of percentage, Lake Sumner has enjoyed the greatest turn-around the past year. Sumner was nearly empty a year ago but is now over 125 percent of normal. Meanwhile, although the Caballo-Elephant Butte storage has increased substantially over the past year, it remains in the 35 to 40 percent of normal range.

Long-range outlook: ENSO-neutral conditions are expected to continue for the remainder of the year and into 2006. This means confidence in seasonal forecasting is not especially high right now. However, long-range models are suggesting the coming winter is more likely to be on the dry side instead of wet. Limited tools available suggest the coming winter will be significantly drier than the winter of 2004-2005.

The following table shows the water year (since October 1, 2004) and calendar year (2005) precipitation:

Calendar Year 2005 and Water Year 2005 (Oct thru Jan) Precipitation for New Mexico

National Weather Service Albuquerque, NM

<u>Location</u>	2005 (Jan - Aug)			Water Year 2005 (Oct 04 through Aug 05)			
	<u>Obs</u>	<u>Normal</u>	<u>%Normal</u>	<u>Obs</u>	<u>Normal</u>	<u>% Normal</u>	<u>SID</u>
<i>Northwest Plateau</i>							
AZTEC RUINS N/M	7.89	6.25	126%	9.82	8.86	111%	AZT
FENCE LAKE	11.64	9.43	123%	15.33	12.68	121%	FCK
FARMINGTON AG CTR	7.13	5.38	133%	9.02	7.60	119%	FAR
GALLUP FAA APRT	8.84	7.68	115%	10.63	10.46	102%	GUP
LINDRITH 2SE	14.31	9.83	146%	18.48	13.04	142%	LDR
NAVAJO DAM	10.42	8.63	121%	17.06	12.23	139%	BLN
<i>Northern Mountains</i>							
ALCALDE	9.34	6.70	139%	11.61	8.80	132%	ALC
CANJILON R/S	11.72	10.86	108%	14.29	14.03	102%	CJL
CERRO	10.53	8.93	118%	13.79	11.41	121%	CRR
CHAMA	20.79	14.17	147%	25.05	19.01	132%	CHM
CIMARRON 4SW	14.49	12.36	117%	18.27	14.52	126%	CPS
GHOST RANCH	8.48	8.27	103%	9.89	10.44	95%	AIQ
JEMEZ SPRINGS	12.70	12.05	105%	15.98	15.51	103%	JEM
JOHNSON RANCH	7.89	7.74	102%	11.50	10.14	113%	CUB
LAS VEGAS FAA APRT	9.63	12.55	77%	14.95	14.87	101%	LVS
LOS ALAMOS	16.67	13.15	127%	20.06	16.39	122%	LOA
RATON FILTER PLT	17.39	13.82	126%	21.93	16.21	135%	RRT
RED RIVER	18.90	15.03	126%	22.37	18.86	119%	RED
SANTA FE 2	9.54	9.42	101%	13.36	12.16	110%	STF
WOLF CANYON	16.56	16.10	103%	20.82	21.07	99%	CUA
<i>Northeastern Plains</i>							
CLAYTON APRT	13.35	11.83	113%	16.12	13.79	117%	CAO
CLOVIS	15.20	12.84	118%	23.18	15.74	147%	CLV
CONCHAS DAM	15.13	10.50	144%	18.05	12.54	144%	CNC
MOSQUERO 1NE	16.66	12.45	134%	19.60	14.60	134%	MSQ
PORTALES	10.83	12.17	89%	14.24	14.71	97%	POR
TUCUMCARI 4NE	15.87	11.95	133%	21.31	14.43	148%	TUC
<i>Southwestern Mountains</i>							
FORT BAYARD	13.16	10.59	124%	19.05	13.68	139%	FTB
GILA HOT SPRINGS	9.07	10.32	88%	14.19	14.29	99%	GHS
GRANTS APRT	5.66	6.89	82%	8.10	9.25	88%	GNT
QUEMADO ESTATES	12.90	9.68	133%	15.44	12.33	125%	QME
RESERVE R/S	10.53	9.74	108%	15.96	13.86	115%	RES
<i>Central Valley</i>							
ABQ WSFO APRT	7.46	5.91	126%	10.26	7.74	133%	ABQ
BOSQUE DEL APACHE	8.40	5.34	157%	11.97	7.24	165%	SAA
LOS LUNAS 3SSW	5.49	5.73	96%	7.97	7.80	102%	LLU
SOCORRO	6.62	6.15	108%	11.66	8.16	143%	SCR

Central Highlands

CAPITAN	12.14	11.55	105%	16.06	13.78	117%	CAP
CLOUDCROFT	21.01	18.03	117%	29.62	22.28	133%	CLD
ESTANCIA 4N	7.99	8.67	92%	11.74	11.09	106%	EST
MOUNTAINAIR R/S	10.29	9.88	104%	14.30	12.63	113%	MTN
RUIDOSO 2NNE	15.23	15.31	99%	21.51	19.33	111%	RUP

Southeastern Plains

ARTESIA 6S	8.01	7.85	102%	13.92	9.95	140%	ART
CARLSBAD	7.55	8.11	93%	13.72	10.46	131%	CWP
FORT SUMNER	13.67	10.13	135%	18.85	12.68	149%	FSM
ROSWELL CLIMAT	8.77	8.77	100%	13.09	11.06	118%	ROW
SANTA ROSA	14.68	10.29	143%	20.81	12.57	166%	SNR
TATUM	10.31	11.05	93%	18.83	13.59	139%	TAT

Southern Desert

ANIMAS	7.60	6.98	109%	10.91	9.44	116%	ANM
DEMING	6.94	5.98	116%	10.04	7.90	127%	DEM
FAYWOOD	9.62	7.60	127%	12.58	10.35	122%	FAY
STATE U LAS CRUCES	6.18	5.94	104%	9.20	8.03	115%	STC
TRUTH OR CONSEQ	6.49	6.94	94%	9.48	10.26	92%	TRC
TULAROSA	8.30	6.32	131%	12.32	8.39	147%	TLR

	2005 (Jan - Aug)	Water Year 2005 (Oct 04 through Aug 05)
<u>Climate Division</u>	<u>% Nrml</u>	<u>% Nrml</u>
Northwest Plateau	128%	124%
Northern Mountains	115%	115%
Northeastern Plains	121%	131%
Southwestern Mountains	109%	115%
Central Valley	121%	135%
Central Highlands	105%	118%
Southeastern Plains	112%	141%
Southern Desert	114%	119%
All Divisions	115%	122%